



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,546	08/01/2003	Steven R. Miller	60130-1396/02MRA0126	2683
26096	7590	09/11/2006	EXAMINER	
CARLSON, GASKEY & OLDS, P.C. 400 WEST MAPLE ROAD SUITE 350 BIRMINGHAM, MI 48009			GOODEN JR, BARRY J	
			ART UNIT	PAPER NUMBER
			3616	

DATE MAILED: 09/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

This office action is in response to the amendment filed on 6/19/06. Currently claims 1-15 are pending; claims 1, 2, 4, 6, 7, 9-11, 13, and 14 are amended and claims 3, 5, 8, 12, and 15 are as previously presented.

Claim Objections

1. Claim 11 is objected to because of the following informalities:

At line 2, of claim 11, "leaf spring include" should be replaced with "leaf spring includes".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 4, 7, and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In regards to claim 4, at page 3 of the Amendments, "wherein said lateral leaf air spring includes opposing ends that support said knuckles at second pivotal connections" is unclear.

Examiner suggests replacing with -- wherein said lateral leaf spring includes opposing ends that support said knuckles at second pivotal connections --.

In regards to claim 7, at page 5 of the Amendments, "wherein said at least one valve is associated with each of said air springs with said valves being independently actuatable" is unclear.

Examiner suggests replacing with -- wherein said at least one valve is associated with one of each of said air springs with said at least one valve being independently actuatable --.

Art Unit: 3616

Claim 8 recites the limitation "said first and second pivotal connections" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim. Claim 8 depends from claim 4, which depends from claim two which depends from claim 1. Claims 1, 2 and 4 do not disclose first pivotal connections, as such there can be no "said first pivotal connections".

Examiner suggests changing the dependency of the claims or defining "first pivotal connections" within the dependency chain.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2, 4-9, and 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over de Goncourt et al., US Patent 4,854,606, in view of Pees et al., US Patent 4,934,667.

In regards to claims 1, 2, 4-9, and 11-15, de Goncourt et al. show all of the claimed elements including a vehicle suspension system comprising:

a frame (9);

a pair of laterally spaced apart control arms (13,14) supported by the frame (9) at first pivotal locations (11,12);

a knuckle (15,16) connected to each of said control arms (13,14);

a lateral leaf spring (1) interconnected between said knuckles (15,16); and,

laterally spaced apart absorbers (27,28), with one arranged between said frame (9) and one of each of said control arms (13,14);

Art Unit: 3616

wherein said control arms (13,14) are upper control arms, and one of each of said absorbers (27,28) is arranged between said frame (9) and one of each of said upper control arms (Reference is made to Figure 3);

wherein said lateral leaf spring (1) supports said knuckles (15,16) at second pivotal connections (25,26);

wherein axes extend through said first (34,35) and second (25,26) pivotal connections, and said knuckles (15,16) being rotatable about said axes.

de Concourt et al. show all of the claimed elements excluding air springs and valve details.

Pees et al. teach an air spring damper (12) having an air spring (generally shown at 164), a pressurized air source (200), a controller (214) for actuating valves (210,212) wherein at least one valve (210,212) is associated with one of each of said air springs (12) and said at least one valve (210,212) being independently actuatable (Reference is made to Column 8, Lines 38-41) in response to commands from said controller (214).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the suspension of de Concourt et al. in view of the teachings of Pees et al. to include an air spring damper and thus an air spring instead of a traditional damper so as to provide optimized vehicle body isolation and damping of both body and wheel axle at their natural frequencies (Reference is made to Abstract, Pees et al.).

6. Claims 1-4, 8, 9, 10, 11, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Young, US Publication 2004/0051262 A1 in view of Merkle, US Patent 4,493,481.

In regards to claims 1-4, 8, 9, 10, 11, and 15 Young discloses a vehicle suspension comprising a frame (12), a pair of laterally spaced apart upper control arms (36a and 36b) pivotally supported by the frame at first pivotal connections (118a and 118b), a knuckle (26) connected to each of the upper control arms, a lateral leaf spring (34) interconnected between the lower portions of the knuckles (32) and

Art Unit: 3616

laterally spaced apart coil over damper springs (112a and 112b) arranged between the frame and the upper control arms (Reference is made to Figures 5-7 and 12);

wherein the upper control arms (36a and 36b) extend from said first pivotal connections (118a,118b) to portions opposite said knuckles (26) said springs (112a,112b) arranged between said portions and said frame (12);

wherein said springs (112a,112b) support said knuckles (26); and,

wherein axes extend through said first (118a,118b) and second pivotal (116a,116b) connections, said knuckles (26) rotatable about said axes.

Young discloses all of the claimed elements as previously discussed, except the laterally spaced apart air springs.

Accordingly, Merkle teaches an air spring (Reference is made to Figure 1; Column 7, Lines 29-33).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the suspension of Young in view of the teachings of Merkle to include an air spring so as to provide a simpler construction, improved force transmission, reliable and inexpensive to manufacture spring support. (Column 2, Line 54 – Column 3, Line 10).

The examiner further notes that the recitation that the air springs “to be arranged” between one of an upper control arm and a frame member is a functional recitation and does not positively recite that the air spring is arranged between the upper control arm and the frame member.

Response to Arguments

7. Applicant's arguments filed 6/19/2006 have been fully considered but they are not persuasive.

With respect to the applicant's arguments of de Goncourt et al. in view of Pees et al. the air spring damper art and the hydraulic damper arts are analogous; therefore an improved air spring damper would be a suitable component to replace a conventional hydraulic damper.

With respect to the applicant's arguments of Young in view of Merkle examiner made no reference to replacing the hydraulic damper of Young. In addition the coil spring art and the air spring art are analogous and an improved air spring would be a suitable component to replace a conventional coil spring.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

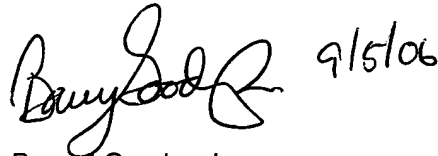
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barry J. Gooden Jr. whose telephone number is (571) 272-5135. The examiner can normally be reached on Monday-Friday 8:00am-4:30pm.

Art Unit: 3616

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul N. Dickson can be reached on (571) 272-6669. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Barry J Gooden Jr.
Examiner
Art Unit 3616

BJG



PAUL N. DICKSON
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600